

**Chenango Canal CROTS Survey (Survey #:722054)
James Everard, Region 7 Fisheries****11/28/2022**

A Catch Rate Orientated Trout Stocking (CROTS) electrofishing survey was conducted on the Chenango Canal, Madison County, on September 12, 2022. This survey was part of the Angler Use and Wild Trout Young of Year Recruitment, Evaluating New York's Inland Trout Stream Catch and Release Season study (NYSDEC 2021). From here on it will simply be referred to as "the plan." The Chenango Canal had been managed under a special "trophy" trout fishing regulation since 1973. The regulation allowed for an all-year open season, a minimum length of 12-inches, 2 fish daily limit, and required the use of artificial lures only. This regulation changed on April 1, 2021 to the statewide Wild-Premier classification (NYSDEC 2020) of an April 1 through October 15 season, and a daily limit of one trout any size for the section between from Route 20 to Oriskany Creek. Plus, an October 16 to March 31, catch and release and artificial lures only season. The upper section, above (south of) Route 20, would fall under general statewide trout stream regulations consisting of the same season dates but a daily limit from April 1-Oct 10 of 5 with no more than 2 longer than 12 in. Prior to April 2021 the canal also received an annual stocking of 1,000 one year-old brown trout. As part of the Wild Premier management plan the canal is no longer being stocked.

Two sites, 350 and 300 foot long each, were electrofished using protocols outlined in the plan. Of note are three differences from the typical CROTS survey. There were two passes completed at each site with catches kept separate, young-of-year trout (YOY) were the main target, and no non-trout species were collected. The two sites were electrofished for a total 2.06 hours of "on-time" covering 0.35 acres of stream. A total of 607 brown trout were collected for a catch per unit effort (CPUE) of 295 trout/hour and 1,695 trout/acre. The CPUE for YOY ($\leq 125\text{mm}$) trout was 264/h and 1,519/acre (Table 1). Using the binomial depletion model (Sullivan et al. 2003) and YOY catches from each pass at site one ($n_1=277$, $n_2=119$) gives an estimated YOY trout population of 483 ± 20 for site 1, and for site two ($n_1=112$, $n_2=36$) an estimate population of 163 ± 9 . Dividing those estimates by acres sampled in each site gives an estimate of $2,502 \pm 110$ YOY/acre for site 1 and 987 ± 53 YOY/acre for site 2 (Table 2). Probability of Capture (p) was 0.575 for site 1 and 0.693 for site 2.

The same survey was completed in 2021 to gain baseline data as part of the plan and all the YOY population estimates can be seen in Table 2. These two sites had been previously surveyed in 2015, 2017, and 2019 following typical CROTS protocol of one pass per site, all trout were the target, and some non-trout species were collected. The purpose of these surveys was to evaluate concerns from anglers that fishing "wasn't what it used to be." Mainly, they weren't catching the numbers of larger trout they used to. Table 3 shows the results of those surveys, and a 1991 survey, indicating that the anglers were likely correct in their observations as there were few ≥ 12 in trout collected. There were some trout observed but not captured that were estimated to be ≥ 12 in in 2019. However, except for the 1991 survey, which took place in June shortly after stocking, there is no other data to compare to, plus the canal is an "unusual" trout stream because much of it is deep (4+ ft), weedy, and has a lot of woody debris. All these "unusual" items make sampling it very difficult except in a few locations. The canal was also stocked with surplus brown trout ≥ 15 in 1995 and 1997 from the Rome Fish Hatchery which

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likely led to greater catches of large trout those years. The canal can, and does, produce some large trout as seen during the 2017 survey when a brown trout was collected but lost and was estimated to be 18-inches. The canal also produces an amazing number of YOY trout and has habitat suitable for trout to obtain “trophy” size which is why it was selected as a Wild-Premier reach.

This 2022 survey was the second year of a four-year study outlined in the plan, so there are no recommendations at this time, and it will be repeated in 2023.

Table 1. Brown trout collected in 2022 in the Chenango Canal, Madison County, and catch per unit effort in trout/hour and trout/acre.

Site	n	YOY	Hours	Acres	CPUE ALL		CPUE YOY	
					Trout/Hour	Trout/Acre	YOY/Hour	YOY/Acre
1	426	396	1.13	0.19	377	2,366	350	2,200
2	181	148	0.93	0.17	195	1,064	159	871
Total	607	544	2.06	0.35	295	1,734	264	1,554

Table 2. Brown trout collected in 2021 and 2022 in Chenango Canal, Madison County, and Young-of-Year (YOY) population estimates by site.

Year	Trout	YOY	YOY Population Estimates (YOY/Acre)	
			Site 1	Site 2
2021	348	198	736±56	741±84
2022	607	544	2,502±115	987±53

Table 3. Brown trout collected in the Chenango Canal, origin (stocked, wild, or unknown), ≥ 12 inches, and percent wild and ≥ 12 inches.

Year	Stocked	Wild	Unknown	Brown Trout		
				≥12 in	% Wild	% ≥12 in
1991	66	72	0	36	52%	26%
2015	6	161	0	2	96%	1%
2017	4	89	1 ¹	5	96%	5%
2019	2	63	0	0	97%	0%
2021 ²	0	348	0	1	100%	0%
2022 ²	0	607	0	0	100%	0%

¹ The one unknown was legal length. ² Two passes were done at each site in 2021 and 2022.



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Literature Cited

NYSDEC. 2020. New York State Trout Stream Management Plan. Bureau of Fisheries, New York State Department of Environmental Conservation, Albany, NY.

NYSDEC. 2021. Angler Use of Wild Trout Young of Year Recruitment; Evaluating New York's Inland Trout Stream Catch and Release Season. Bureau of Fisheries, New York State Department of Environmental Conservation, Albany, NY.

Sullivan, Patrick J. and Boomer, G. Scott. 2003. An Empirical Bayes Approach for Estimating the Binomial N from a Multiple Pass Depletion Survey with Application to Trout Streams in a New York State Watershed. Cornell University.

